A.6. Asymmetries in between-category false alarms

For most category pairs, the false alarm rates were somewhat asymmetrical: the false alarm rate for category X among category Y was not the same as the false alarm rate for category Y among category X. The amount of asymmetry was never more than 10% (lake), and appears to reflect more noise in the data than a conceptual difference in the similarity between categories (cf. Tversky, 1977). The small asymmetries could not be well-explained by within-category variance of the ranking data, or by the number of unique labeled regions for the category.

In performing the correlations between the Euclidean distances and false alarm rates, we average all X-among-Y and Y-among-X pairs. The Euclidean distance *D* between category prototype *p* and category prototype *q* was calculated as .

$$D = \sqrt{\sum_{i=1}^{7} (p_i - q_i)^2}$$

where *i* ranges over the seven global properties. Table A4 shows the distancesbetween category prototypes in the global property space

The Euclidean distance between basic-level categories in global property space of Experiment 1
Larger values indicate more differences between two categories. The diagonal (null distance) is indicated with *.

These distances are related to the false alarms given by human observers in Experiment 2, shown in Table A5 (a is from the eight meta-observers, and b is from the complete-observer group).

Distribution of human false alarms made between basic-level categories in Experiment 2
The diagonal (of value zero) is indicated with *.

The confusion matrix of the classifier from Experiment 3 shown in Table A6.

The diagonal (of value zero) is indicated with *.